## **SERN General Assembly** 2023 11-12 MAY 2023 Cervia



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General Assembly 2023 - 11 MAY

#### LOCAL GREEN DEALS CITY PLANNING AND CLIMATE ADAPTATION

# Adapting to coastal flooding when redeveloping Sanden

Cornelia Sörman Municipality of Vänersborg







## Sanden - background

- A constructed island made of residual masses from a canal construction in 1916
- Industry and harbour
- Connected to the mainland by several bridges, connecting both railway and roads to the island
- Located closely to the central parts of Vänersborg

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### Plans for city development

- Redeveloping the industrial environment to a thriving new part of the city centre with housing, offices, and shopping facilities
- Building a new train platform connected to the central station
- Shutting down the harbour



#### Increasing risk of flooding, lake Vänern

- Vänern, Sweden's largest lake, has an increased risk of flooding due to climate change
- Mean water levels are now +44,5 meters above sea level
- Increased risk of extreme weather conditions including wind and rainfall → the municipality is dimensioning the plan after a water level of +47,20 meters above sea level

Mean depth: +44,5 Dimensioning depth: +47,2  $\begin{array}{c} - 1(+47.22 - +47.81) \\ - 2(+47.02 - +47.22) \\ - 3(+46.96 - +47.02) \\ - 4(+46.51 - +46.96) \\ - 5(+46.18 - +46.51) \\ - 6(+45.85 - +46.18) \\ - 7(+45.45 - +45.85) \\ - 8(+45.15 - +45.45) \\ - 9(+44.58 - +45.15) \\ - 10(- + 44.58) (1) \end{array}$ 



## **Climate adaptation**

- Impossible to raise the ground level of the entire area
- Raising street levels a network of main streets enabling emergency vehicle access to the housing areas
- Waterproof ground floors and ground floor garages under elevated courtyards
- The climate adaptation measures are legislated through demands in the local plan



SKANSKA

Arkitektbyrån Design.



PROJEKT Södra Sanden Vänersborg DATUM 2022-12-12 SKANSKA Arkitektbyrån Design.



## Involvement of stakeholders and community

#### Stakeholders:

- Continuous dialogue with landowners and building companies connected to the area

#### **Community**:

- Public involvement through the regular planning process, consultation and planned reviewing process



#### Summary and questions



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